

IN THE CLAIMS

Please amend the claims as follows. Please cancel claims 6 - 17

For the Examiner's convenience, a list of all claims is included below.

1. (Original) A coaxial adapter comprising:

a ground sleeve having a first ground sleeve end adapted to contact a ground lead of a coaxial cable and a second ground sleeve end adapted to contact a ground probe of a test probe, the ground sleeve being characterized by a first outer radius at said first ground sleeve end and a second outer radius at said second ground sleeve end; and

a signal pin positioned inside of and spaced apart from the ground sleeve, the signal pin having a first signal pin end adapted to contact a signal lead of a coaxial cable and a second signal pin end adapted to contact a signal probe of a test probe, the signal pin being characterized by a first inner radius at said first signal pin end and a second inner radius at said second signal pin end;

wherein the first outer radius is different than the second outer radius, the first inner radius is different than the second inner radius, and a ratio of the first inner radius to the first outer radius is the same as the ratio of the second inner radius to the second outer radius.

2. (Original) The coaxial adapter of claim 1 wherein the signal pin is externally tapered and the ground sleeve is internally tapered to maintain said ratio constant from the first signal pin end to the second signal pin end.

3. (Original) The coaxial adapter of claim 2 wherein the ground sleeve is made of copper.

4. (Original) The coaxial adapter of claim 2 wherein the first ground sleeve end is externally threaded.

5. (Original) The coaxial adapter of claim 4 wherein the second ground sleeve end is externally unthreaded.

6-17 (Cancelled)

18. (Currently Amended) A coaxial adapter comprising:

a an internally tapered ground sleeve having a first ground sleeve end adapted to contact a ground lead of a coaxial cable and a second ground sleeve end adapted to contact a ground probe of a test probe, the ground sleeve being characterized by a radius r_o measured from the center of the ground sleeve to the inner surface of the ground sleeve;

a an externally tapered signal pin positioned inside of and spaced apart from the ground sleeve, the signal pin having a first signal pin end adapted to contact a signal lead of a coaxial cable and a second signal pin end adapted to contact a signal probe of a test probe, the signal pin being characterized by a radius r_i measured from the center of the ~~test probe~~ signal pin to an outer surface of the ~~test probe~~ signal pin, and the signal pin and ground sleeve having a relative magnetic permeability μ ; and

a dielectric material interposed between at least part of the signal pin and at least part of the ground sleeve, the dielectric material having a relative permittivity ϵ ;

wherein the ratio r_o/r_i is maintained constant over a length of said coaxial adapter and r_o , μ , r_i , and ϵ are selected such that an impedance Z_o of the adapter matches an impedance of the test probe according to the following formula:

$$Z_o = \frac{\ln(r_o/r_i)\sqrt{\mu/\epsilon}}{2\pi}$$

19. (Original) The coaxial adapter of claim 18 wherein the dielectric material is air.
20. (Original) The coaxial adapter of claim 18 wherein the signal pin is tapered from the first signal pin end to the second signal pin end.
21. (Original) The coaxial adapter of claim 19 wherein the ground sleeve is tapered from the first ground sleeve end to the second ground sleeve end.
22. (Cancelled)